In all years displayed, Montana's overall (i.e. all cause) age-adjusted death rates are below or about equal to those for the U.S. and have declined over time. Montana's age-adjusted death rates are also below those for the U.S. for many of the chronic diseases displayed; Montana's rates for heart disease, cancer, and nephritis (nephritis, nephrotic syndrome, and nephrosis) were lower than those for the U.S in seven or eight of the eight years for which both Montana and U.S. values are displayed. Montana's rates for, chronic liver disease and cirrhosis were lower than U.S. rates in both of the ICD-9 years but about the same or higher in most of the ICD-10 years.

Montana's death rates for cerebrovascular disease, pneumonia and influenza, and diabetes showed inconsistent relationships with the U.S. rates, with the trend lines crossing each other more than once in this period. Montana's diabetes rates were lower than those for the U.S. in both of the ICD-9 years. The U.S. diabetes rate seems relatively unaffected by the conversion to ICD-10. The Montana diabetes rate appears as unstable before and after the conversion. This may be the result of a change in a relatively small number of deaths from diabetes and have nothing to do with the revision of ICD. Montana's death rate for cerebrovascular disease was higher than the U.S. rate for one of the years in which ICD-9 coding rules were used and two of the ICD-10 years.

The state rates for chronic lower respiratory disease (C.L.R.D.)--which includes chronic and unspecified bronchitis, emphysema, and asthma--were higher than those for the U.S. in all years displayed. Revision of ICD did not change this relationship. Montana's death rate from Alzheimer's disease was virtually the same as that of the U.S. in 1997, when ICD-9 was used for cause-of-death classification, but higher in most of the other years displayed. Revision of ICD substantially increased Alzheimer's rates for both Montana and U.S.

Montana's rates for one traumatic cause of death—homicide and legal intervention—were lower than the corresponding U.S. rates in all years displayed. Montana's rates for the remaining traumatic causes of death—accident (both motor vehicle and non-motor- vehicle) and suicide rates—were substantially higher than those for the nation in all years displayed. None of the death rates for these traumatic causes appear to have been affected greatly by the ICD revision.

These graphs show secular (i.e. long-term, despite occasional instability in the short-term) reductions in Montana's age-adjusted death rates for specific chronic diseases such as heart disease, cancer, pneumonia and influenza, and cerebrovascular disease. The rates for chronic liver disease and cirrhosis are on the increase, although the trends are somewhat unstable and possibly affected by the change in ICD coding. The rate of suicide has increased slightly since the introduction of ICD-10 and is often nearly twice the U.S. rate.

The rates for Alzheimer's, nephritis, C.L.R.D., and diabetes are apparently neither increasing nor decreasing consistently. While U.S. death rates for accidents seem to be increasing, Montana's seem to be relatively stable, although much higher than U.S, rates. Montana's rates for motor vehicle accidents are not only higher than U.S. rates, they are also increasing.

For both Montana and the U.S., age-adjusted death rates for nephritis and Alzheimer's increased after the introduction of ICD-10, suggesting that, to some degree, the increase reflects conversion to the new revision of ICD. The rates for pneumonia and influenza decreased after the conversion to ICD-10. These results are consistent with the comparability ratios for these causes discussed earlier. (See **Figure 1** in the Technical Overview.)

AGE, SEX, AND RACE

Cause of death varies with the age, sex, and race of the decedent. Males were more likely than females to die of many of the leading causes of death listed in **Table S-7** found in Vital Statistics reference tables. For instance, more males than females died of chronic lower respiratory diseases and chronic liver disease and cirrhosis. The larger difference between males and females, however, was seen in deaths from traumatic causes. About 65% of the accidental deaths were those of males (see **Figure 47**). More than twice as many males as females died of homicide. Finally, more than six times as many males as females committed suicide. In contrast, much more nearly equal numbers (and proportions) of males and females died of heart disease and cancer.

It is also instructive that slightly more than 17.7% of the Native Americans who died in 2006 died of one of the traumatic causes—suicide, homicide, or accident—while only about half that proportion (8.5%) of whites were claimed by these causes.

Accidents caused more deaths of the young than the old. They accounted for 18% of the accidental deaths of those 14 years of age or younger, 59.6% of the deaths of those between the ages of 15 and 24, and 38.4% of those between the ages of 25 and 34 years. By contrast, accidents accounted for less than 3% of the deaths of those aged 65 or older.

Suicide was the cause of death for 17.0% of the decedents between the ages of 15 and 44. By contrast, it was the cause of death for only 2.2% of decedents of all ages. Of the suicide victims, 86.6% were males.

As age at death increases, chronic diseases—particularly heart disease and cancer—become more frequent as the cause of death. Cancer, followed by heart disease, was the leading cause of death for the age categories between 45 and 84 years—30.9% and 20.5%, respectively. However, for the age categories 85 and older, heart disease was the leading cause, with cancer second—28.4% and 11.7%, respectively. For the all-age category, cancer (23%) was the leading cause of death, followed closely by heart disease (22%). Frequencies of death by cause for various age groups are shown in **Figure 49**. Frequencies and crude rates for the ten leading causes of death (for decedents of all ages) are shown for Montana and each of its counties in **Table S-6**.

Figure 47 displays frequencies of death for Montanans in 2006 by race, sex, and selected major cause of death.

Figure 47

FREQUENCY OF DEATH BY SELECTED CAUSE, RACE, AND SEX
MONTANA RESIDENTS, 2006

Cause of Death	All Races Male	All Races Female	White Male	White Female	Native American Male	Native American Female
All Causes	4,273	4,162	3,954	3,920	264	212
Cancer	1,023	917	965	866	51	46
Heart Disease	999	858	951	822	39	30
Chronic Lower Respiratory Diseases	259	317	246	307	11	8
Accidents	354	193	302	172	41	21
Cerebrovascular Disease	181	277	171	267	7	9
Diabetes Mellitus	133	118	120	101	11	13
Alzheimer's Disease	55	171	55	168	-	3
Suicide	162	25	150	20	11	4
Pneumonia & Influenza	79	91	72	86	6	5
Nephritis, Nephrotic Syndrome, and Nephrosis	69	63	63	58	5	4
Chronic Liver Disease and Cirrhosis	58	54	47	32	9	19
Homicide	24	11	16	10	7	-
All Other Causes	877	1,067	796	1,011	66	50

As mentioned in the Technical Overview of this report, the Montana death certificate, beginning in 2003, records race in greater detail than in the past. Not only are more racial categories used, but informants are also specifically asked to name all of the several classifications that may apply to a decedent. The result of this additional prompting has been a much greater proportion of decedents classified by two or more races. In order to calculate mortality rates by race, NCHS has provided OVS the most likely "bridged," or main, race for each decedent. These bridged race classifications are described in the Introduction of this report and are used in the report's Figures and mortality reference tables. This different manner of counting deaths by race could very possibly alter the outcome of mortality ratios calculated for the various races and affect apparent racial disparities. Figure 48 displays the distribution of decedents by race for the last decade, by year of death.

Figure 48

FREQUENCY AND PERCENT DISTRIBUTION OF DEATH BY RACE*
MONTANA RESIDENTS, 1997-2006

RACE	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
ALL RACES	7,730	7,960	8,082	8,071	8,252	8,473	8,441	8,083	8,497	8,435
WHITE	7,374	7,590	7,618	7,668	7,839	8,003	7,918	7,568	7,968	7,874
Percent	95.4	95.4	94.3	95	95	94.5	93.8	93.6	93.8	93.3
NATIVE AMERICAN	333	345	429	366	385	433	402	422	438	476
Percent	4.3	4.3	5.3	4.5	4.7	5.1	4.8	5.2	5.2	5.6
OTHER OR UNKNOWN RACE	23	25	35	37	28	37	121	93	91	85
Percent	0.3	0.3	0.4	0.5	0.3	0.4	1.4	1.2	1.1	1

* Only single racial classifications were reported on the Montana death certificate in years prior to 2003. In subsequent years multiple races were reported and, for those records on which more than one race was reported, a single main or "bridged" race was chosen from among the reported races.

Figure 49

FREQUENCY OF DEATH BY CAUSE AND BY AGE MONTANA RESIDENTS, 1997-2006

CAUSE OF DEATH	TOTAL	UNDER 1 YEAR	1-4 YEARS	5-14 YEARS	15-24 YEARS	25-34 YEARS	35-44 YEARS	45-54 YEARS	55-64 YEARS	65-74 YEARS	75-84 YEARS	85 OR MORE
ALL CAUSES	8,435	70	19	28	146	138	257	589	918	1,312	2,282	2,676
CANCER	1,940	-	1	6	10	9	26	138	328	490	619	313
HEART DISEASE	1,857	-	-	1	1	10	39	115	180	239	511	761
CHRONIC LOWER RESPIRATORY DISEASES	576	-	-	1	-	-	-	15	53	132	229	146
ACCIDENT	547	6	8	7	87	53	63	88	53	34	60	88
CEREBROVASCULAR DISEASE	458	-	-	-	-	-	4	17	22	55	138	222
DIABETES	251	-	-	-	-	-	6	14	40	54	84	53
ALZHEIMER'S DISEASE	226	-	-	-	-	-	-	-	2	16	49	159
SUICIDE	187	-	-	2	28	30	34	32	22	16	14	9
PNEUMONIA AND INFLUENZA	170	-	-	-	1	1	2	8	9	16	39	94
NEPHRITIS, NEPHROTIC SYNDROME & NEPHROSIS	132	-	-	-	2	-	1	2	12	17	42	56
CHRONIC LIVER DISEASE AND CIRRHOSIS	112	-	-	-	1	2	20	30	29	14	11	5
CONGENITAL MALFOMATIONS & CHROMOSOMAL ANOMALIES	37	16	-	2	-	5	3	3	1	2	3	2
HOMICIDE	35	3	2	1	4	7	6	7	2	3	-	-
ATHEROSCLEROSIS	31	-	-	-	-	-	-	2	2	1	10	16
CONDITIONS ORIGINATING IN PERINATAL PERIOD	18	18	-	-	-	-	-	-	-	-	-	-
SUDDEN INFANT DEATH SYNDROME	13	13	-	-	-	-	-	-	-	-	-	-
HIV INFECTION	6	-	-	-	-	-	1	3	1	1	-	-
OTHER CAUSES	1,839	14	8	8	12	21	52	115	162	222	473	752